

## ABSTRACT OF THE DISCLOSURE

A method for non-invasively determining functional cardiac output (FCO) and/or venous blood CO<sub>2</sub> partial pressure (PvCO<sub>2</sub>). The amount of CO<sub>2</sub> (VCO<sub>2</sub><sup>N</sup>) released from the blood and end capillary blood CO<sub>2</sub> content (CcCO<sub>2</sub><sup>N</sup>) are determined from measurements from exhaled breathing gases. The CO<sub>2</sub> content of the breathing gases inhaled by the subject is increased and values for VCO<sub>2</sub><sup>R</sup> and CcCO<sub>2</sub><sup>R</sup> are obtained. A regression analysis is performed using the obtained VCO<sub>2</sub><sup>N</sup>, VO<sub>2</sub><sup>R</sup>, CcCO<sub>2</sub><sup>N</sup>, and CcCO<sub>2</sub><sup>R</sup> values. The regression line is extrapolated to obtain a value for CcCO<sub>2</sub> when (VCO<sub>2</sub>) is zero so that CvCO<sub>2</sub> becomes known.

The CvCO<sub>2</sub> thus determined can be inserted in a non-differential form in the Fick equation, along with VCO<sub>2</sub> and CcCO<sub>2</sub> values from normal breathing, to determine FCO. To determine PvCO<sub>2</sub>, CvCO<sub>2</sub> is altered in accordance with the amount of oxygen in the venous blood, to correctly indicate PvCO<sub>2</sub>. The continuing validity of the FCO measurement can be examined on a breath-by-breath basis by noting changes in an indicator variable, such as VCO<sub>2</sub> or end tidal CO<sub>2</sub> amounts.